

Serial No.: 10/736,487

Amendment Dated: August 8, 2005

Response Accompanying RCE to Office Action of November 10, 2004

**REMARKS/ARGUMENTS**

In view of the accompanying Request for Continued Examination, Applicants request further examination of the above-identified application and reconsideration of the rejections of claims 1- 13 in the Office Action of November 10, 2004, currently under appeal. Prosecution on the merits was closed by the Notice of Appeal filed March 10, 2005, in the above-identified application. By this Amendment and Response and the accompanying Request for Continued Examination, Applicants respectfully request that the Examiner reopen examination.

Claims 6, 7, 9 and 10 are currently amended as noted hereinabove to recite "a relatively high air side pressure drop evaporator". Claims 6, 9 and 10 have also been amended to correct a clerical error by deleting an extraneous "the" from the next to last line thereof. Claims 11 and 14 have been amended to correct a grammatical error by changing "enhance" to --enhanced--. Claims 8 and 13 remain as previously presented. Claims 15 and 16 are currently amended to correct a claim numbering error in Applicants' prior communication filed October 14, 2004, wherein these claims were the second set of claims 12 and 13, respectively. Each of claims 13 and 16 have been amended to change "the" in line 3 thereof to --said at least one-- to provide appropriate antecedent basis. New claims 17 and 18, dependent from claim 6, have been added.

The specification has been amended as hereinbefore indicated thereby to conform the Summary of the Invention to the claims as currently presented. No new matter has been added.

Claim 6 stands rejected under 35 USC 103(a) as being unpatentable over Renard, U.S. Patent 5,502,979, in view of Hansen et al., U.S. Patent 3,741,242. The Examiner cites Renard as disclosing a refrigerated display comprising an insulated cabinet 50 defining a product display area/shelves 1 maintained in a refrigerated condition at a temperature above 32 degree F and having a compartment 37 separate from the product display area 1, an evaporator 28 disposed in the compartment 37, at least one air circulator 29 disposed within the compartment 37 in cooperative relationship with the evaporator 28; and an air circulation circuit (23-26) connecting the product display area 1 and in direct air flow communication with the compartment 37. The Examiner concedes that Renard does not disclose a high-pressure drop evaporator.

The Examiner cites Hansen et al. as teaching the use of a high-pressure drop evaporator in a refrigeration system for the purpose of running a refrigeration system,

Serial No.: 10/736,487

Amendment Dated: August 8, 2005

Response Accompanying RCE to Office Action of November 10, 2004

specifically citing column 3, lines 20-23. It is the opinion of the Examiner that it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the refrigerated display cabinet of Renard in view of Hansen et al. such that a high-pressure drop evaporator could be provided in order to run a refrigeration system. Applicants respectfully traverse this rejection with respect to claim 6 as amended.

In Hansen et al., the pressure drop mentioned refers to the drop in pressure of the refrigerant circulating through the evaporator tubes. The text in Hansen et al. cited by the Examiner specifically states that "very long and restrictive circuits which result in relatively high pressure drop as the refrigerant passes through the evaporator" (emphasis added). Thus, the evaporator of Hansen et al is a high refrigerant side pressure drop.

Applicants have amended claim 6 to recite a "high pressure air side pressure drop evaporator". This recitation is supported in the specification as filed in the third paragraph of the Summary of the Invention, in the Abstract, and in the discussion at page 8, line 11 through page 9, line 2. In the evaporator of the invention, unlike the evaporators of Renard or Hansen et al, or conventional evaporators used in refrigerated merchandisers, the airflow passing through the evaporator, i.e. over the outside surface of the tubes, experiences a relatively high pressure drop when traversing the evaporator. Applicants respectfully submit that Hansen et al does not teach, and can not properly be read to teach, the use of an evaporator exhibiting a high pressure drop on the air side. Further, if one skilled in the art were to modify Renard in accord with the teachings of Hansen et al, one would replace the evaporator of Renard with an evaporator having a high refrigerant side pressure drop, not an evaporator having a high air side pressure drop as taught by Applicants. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection of claim 6 under 35 USC 103(a) as being unpatentable over Renard, U.S. Patent 5,502,979, in view of Hansen et al., U.S. Patent 3,741,242.

Claims 9-11, and 13 stand rejected under 35 USC 103(a) as being unpatentable over Renard, U.S. Patent 5,502,979, in view of Hansen et al., U.S. Patent 3,741,242, as applied to claim 6, and further in view of Cur et al., U.S. Patent 5,157,941. The Examiner cites Cur et al. as teaching the use of a fin density in the range of 8 fins per inch in an evaporator (citing column 3, line 57). Applicants respectfully traverse this rejection.

Serial No.: 10/736,487

Amendment Dated: August 8, 2005

Response Accompanying RCE to Office Action of November 10, 2004

In Cur et al., enclosure 12 is the freezer compartment of the household refrigerator and enclosure 14 is the refrigerated compartment of the household refrigerator. In the freezer enclosure 12, the air temperature would be below 32 degrees F, while in the refrigerated compartment 14 the air temperature would be above 32 degrees F. Thus, air returning from the freezer enclosure 12 would be substantially dehumidified as most moisture previously therein would already have deposited as frost within the freezer enclosure 12, not be carried back to the evaporator. Thus, the portion of the evaporator receiving the substantially dry air from the freezer enclosure 12 could be provided with fins at a high density, e.g. 8 fins per inch, without fear of frost forming thereon. Conversely, however, the air returning to the evaporator from the refrigerated enclosure 14 would be above 32 degrees F and consequently contain moisture that would tend to deposit as frost on the fins of the evaporator. Thus, the section of the evaporator receiving this relatively warmer air from the refrigerated enclosure 14 would, in accord not only with the admitted prior art practice, but also the teaching of Cur et al., be equipped with fins at a low fin density, e.g. at or below 4 fins per inch. Cur et al. teaches directing the moisture-bearing air from the refrigerated enclosure 14 to the low-fin density section of the evaporator 24 and directing only the dry air from the freezer enclosure 12 to the high-fin density of the evaporator 24. Accordingly, Applicants respectively submit that one of ordinary skill in art would, at the time of the invention, be led by Cur et al. to use only a low fin density, e.g. at or below 4 fins per inch, evaporator in the refrigerated merchandiser of Renard, a configuration that does not yield Applicants' claimed invention and a configuration directly contrary to that claimed by Applicants. The teaching of providing a high pressure drop evaporator in a refrigerated merchandiser, and the teaching of using a high fin density in an evaporator of a refrigerated merchandiser, not a freezer, to provide a high air side pressure drop evaporator, can be found only in Applicants' own specification, not in Hansen et al or Cur et al. Applicants respectfully request that the Examiner withdraw the rejection of claims 9, 11 and 13 under 35 USC 103(a) as being unpatentable over Renard, U.S. Patent 5,502,979, in view of Hansen et al., U.S. Patent 3,741,242, and further in view of Cur et al., U.S. Patent 5,157,941 .

Claim 12 stands rejected under 35 USC 103(a) as being unpatentable over Renard, U.S. Patent 5,502,979, in view of Hansen et al., U.S. Patent 3,741,242, and

Serial No.: 10/736,487

Amendment Dated: August 8, 2005

Response Accompanying RCE to Office Action of November 10, 2004

further in view of Cur et al., U.S. Patent 5,157,941, as applied to claim 9, and further in view of Navarro, U.S. Patent 6,145,327. The Examiner cites Navarro as teaching the use of a plurality of fans 16 in a refrigerated show case (citing Figure 7) for the purpose of running a refrigeration system. Applicants respectfully traverse this rejection.

Applicants admit that Navarro discloses a refrigerated display case having a plurality of fans. However, Navarro does not teach, disclose or even suggest the use of a plurality of fans in combination with a high air side pressure drop evaporator as taught by Applicants. Further, it is respectfully submitted that Renard, as modified by Hansen et al., or Cur et al., or Navarro, taken alone or in combination, can only be read to teach a conventional low pressure drop, i.e. low fin density, fin and tube evaporator of the type characteristic of the prior art admitted by Applicants in the specification of the application, that is a low fin density heat exchanger in combination with one or a plurality of fans. The only teaching of Applicants' invention of providing a high air side pressure drop evaporator in a refrigeration system, whether with one fan or a plurality of fans, is found in Applicants' own specification. Further, if one skilled in the art were to modify Renard in accord with the teachings of Hansen et al., Cur et al., and Navarro, one would replace the evaporator of Renard with an evaporator having a high refrigerant side pressure drop and a low fin density, and therefore a low air side pressure drop, not an evaporator having a high air side pressure drop as taught by Applicants. Applicants respectfully request that the Examiner withdraw the rejection of claim 12 under 35 USC 103(a) as being unpatentable over Renard, U.S. Patent 5,502,979, in view of Hansen et al., U.S. Patent 3,741,242, and further in view of Cur et al., U.S. Patent 5,157,941, and Navarro, U.S. Patent 6,145,327.

Although claim 6-13 were listed as rejected on page 1 of the Office Action dated November 10, 2004, no specific art was applied against either claim 7 or claim 8 in the "Claim Rejections" section of the Office Action. It is respectfully submitted that claims 7 and 8, dependent from claim 6, are patentable over the cited art at least for the reasons set forth hereinbefore with respect to claim 6 and claims 9-11. Additionally, Applicants respectfully submit that claims 14-16, dependent from claim 10, and new claims 17-18, dependent from claim 6, are patentable over the cited art at least for the reasons set forth hereinbefore with respect to claims 6, 10 and 13.

In summary, Applicants respectfully submit that the claims 6 – 18 distinguish over the art of record for the reasons stated hereinbefore. Accordingly, in view of the

Serial No.: 10/736,487

Amendment Dated: August 8, 2005

Response Accompanying RCE to Office Action of November 10, 2004

Request for Continued Examination and this Amendment and Response, Applicants respectfully request that the Examiner reconsider all rejections of the claims as now presented, and upon reconsideration withdraw all rejections of now pending claims 6-18, and pass claims 6-18 to allowance.


If the Examiner wishes to expedite disposition of the above-captioned patent application, he is invited to contact Applicant's representative at the telephone number below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 03-0835.

Respectfully submitted,

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10 of 10